REMARKS

Reconsideration of this application is respectfully requested.

Claims 31 has been amended to more clearly define the invention by incorporating therein the limitation contained in Claims 32 and 74. Accordingly, Claims 32 and 74 have been cancelled, and Claims 33 through 36 have been amended to depend from Claim 31. There has been no change in substance and no new matter is involved since the basis for the language "a collection member....placed at or adjacent the nip where the exterior surface of the composition layer contacts the absorbent material" is found in the specification on page 9 at lines 17 through 19.

The rejection of Claims 31, 33 through 43, 52, 53, 56 through 61 and 63 as being unpatentable over Johnson et al. (WO 01/18604) in view of Kurotori et al. (U.S. 4,415,633), under 35 U.S.C. 103(a), is respectfully traversed. As described in the specification on page 4 at lines 14 through 20 and shown in Figures 1 and 2, the present invention as defined in Claim 31 comprises an apparatus 10 for forming a relief pattern from a photosensitive element 16 containing a composition layer having an exterior surface 17 and capable of being partially liquefied. Specifically the apparatus 10 comprises means for supplying 38 an absorbent material 35 to the exterior surface 17 of the composition layer (see page 7, lines 22 through 36, and Figure 1). The apparatus 10 is provided with a means for supporting, e.g., drum 18, the photosensitive element 16 wherein at least one of the means for supplying 38 and the means for supporting 18 are movable relative to the other (see page 7, lines 37 and 38), and a means for contacting 47, 48 and 49 the photosensitive element 16 with the absorbent material 35 at a nip 60 to allow at least a portion of the liquefied material of the composition layer to be absorbed by the absorbent material 35 (see page 8, lines 1 through 5, and Figure 1). The apparatus 10 also comprises a means for heating 30 and 38 the exterior surface 17 of the composition layer to a temperature T_r sufficient to cause a portion of the layer to liquefy and cause one or more components to form a vapor (see page 7, lines 3 through 30, and Figure 1). The vapor formed during thermal development is controlled in order not to disturb the relief surfaces of the photosensitive element 16 being developed by collecting the vapor during heating, means for combining the vapor and means for managing removal of the vapor (see page 8, line 33 to page 9, line 6). The apparatus 10 further includes a collection member 55 for collecting the vapor placed at or adjacent the nip 60 where the exterior surface 17 of the composition layer contacts the absorbent material 35 (see page 9, lines 7 through 36, and Figure 1). One embodiment of the apparatus 10 can also include a shroud 56 located on a

backside of the hot roller 38 opposite the means for supporting, e.g., drum 18, to substantially enclose the collection member 55 (see page 10, lines 4 through 22, and Figure 1).

Johnson et al. describe a method and apparatus for thermal processing a photosensitive element. The thermal development apparatus 10a is ventilated by a vacuum fan unit 368 which controls fumes resulting from heating the composition layer. The exhaust from the vacuum fan unit 368 is vented through a conduit 370. Along a bottom of a plenum associated with the vacuum fan unit 368 is a plurality of inlets 369. The vacuum fan unit 368 pulls air circulating through the apparatus 10a to the exhaust conduit 370. The method of collecting the air to an exhaust port in the apparatus as described by Johnson et al. is ineffective and unsatisfactory in managing the presence of components that can condense in the vapor and/or have condensed to form droplets in the vapor before reaching the exhaust port. As described in the background of the present specification, the presence of condensable vapor and already condensed droplets presents problems in the cleanliness and operation of the apparatus and can damage the photosensitive elements that are being thermally treated. First, liquid droplets flowing with the exhaust air can collide and deposit a liquid film on parts of the apparatus. Additionally, any part of the apparatus in the flow of air to the exhaust can provide a surface for condensation of the vapor and an accumulation of the liquid condensate, particularly if the part is cooler than the dew point of the vapor mixture. Thirdly, the rate of condensation of the condensable components in the vapor is time and temperature dependent so that collection at a location far from the heating station offers more time for cooling and condensate formation and subsequent deposition inside the processor.

Kurotori et al. disclose an apparatus for treating an odorous exhaust gas including solvent vapor generated while an element is being developed by means of a developer. As shown in Figure 3, the apparatus comprises a suction pump 7, heat fixing rollers 10 and covers 24, 25 and 26. Solvent vapor generated from the heat fixing operation is sucked via suction pump 7 to remove such vapor from within the apparatus (see column 5, lines 1 through 5, 46 and 47; and column 6, lines 1 through 7).

Claim 31 recites that the collection member 55 for collecting the vapor is placed at or adjacent the nip 60 where the exterior surface 17 of the composition layer contacts the absorbent material 35. Collecting the vapor at this particular location is described in the specification on page 9 at lines 7 through 20, and shown in the embodiment represented by Figure 1. The combination of Johnson et al. with Kurotori et al. does not show or suggest placing a collection member 55 at or adjacent the nip 60 where the exterior surface 17 of the

composition layer contacts the absorbent material 35. Johnson et al. do not teach or suggest a collection member, such as a vent, plenum or shroud at the location where the exterior surface 17 contacts the absorbent material 35.

The creating of airflow to an exhaust collection as disclosed by Johnson et al. does not anticipate or render obvious the present invention which includes a collection member 55 for collecting the vapor at or adjacent the nip 60 where the exterior surface 17 of the composition layer contacts the absorbent material 35, as recited in Claim 31. The apparatus of Johnson et al. exhausts air after circulating within the entire apparatus at the exhaust conduit 370 which is disposed at a location remote from the nip 60 location where damaging vapor is generated. The circulating air may include some vapor that exhausts from the apparatus. However, the vapor that escapes into the apparatus environment often cools and condenses onto various surfaces in the apparatus, and thus, not all the vapor that is generated, is "collected" by the exhaust system. Even if one was to consider the inlets 369 into the plenum for the vacuum fan unit 368 as collecting the vapor in the apparatus by Johnson et al., the location of the inlets 369 are still removed enough from the heating station that vapor escapes from the heating station region into other environs of the apparatus, and provides no or only minimal containment of the vapor. In either case, the exhaust system described by Johnson et al. is so remote from the location where the damaging vapor is generated that the exhaust system could not be considered a collection member 55 for colleting the vapor at or adjacent the nip 60 where the exterior surface 17 contacts the absorbent material 35, as recited in Claim 31. The blowing of air to cool the photosensitive element that is described by Johnson et al. is not a means for collecting the vapor, nor a means for directing the vapor. In effect, the blowing of air in Johnson et al. disperses the vapor throughout the environment of the apparatus and encourages cooling and condensation of components in the vapor.

The Examiner has stated that Applicants' claimed apparatus is merely a mechanical modification and is therefore an obvious expedient over the configuration disclosed by Johnson et al. in view of Kurotori et al. However, Johnson et al. do not acknowledge any problems with vapor forming condensate throughout the apparatus, and thus do not teach or even suggest structural elements in the apparatus to handle condensate formed from the vapor throughout the apparatus. The blower 356 and the optional shroud 358 in Johnson et al. that extends around the drum in close proximity to surface 22 of the drum are part of a cooling means 355 for cooling the photosensitive element. Johnson et al. do not teach or suggest that the blower and optional shroud could provide any other function other than for cooling of the

photosensitive element. The machine frame is ventilated by a vacuum fan unit 368, which forms a plenum with the underpart of conveyor 144a, to control fumes from heating the composition layer on the sheet. The inlets for the unit 368 are along the bottom of the unit such as through a plurality of inlets 369. Johnson et al. acknowledge that the vacuum fan unit is used to control fumes from heating of the photosensitive element, but the inlets to the plenum and the vacuum fan unit are remote from where the vapors are generated. Thermal development processors having the vacuum fan unit exhausting air from inside the processor as disclosed by Johnson et al. have only limited success in managing the vapor and condensate. Johnson et al. fail to acknowledge that the vapors can remain within the processor and then condense and drip uncontrolled onto different areas within the processor, and even onto the photosensitive element.

Johnson et al. fail to teach or suggest that damaging vapor is most likely to form when the composition layer is reaching or reaches the temperature to liquefy. Johnson et al. fail to teach or suggest that such vapor should be collected at or adjacent the nip 60 where the exterior surface 17 of the photosensitive element 16 contacts the absorbent material 35. Collecting the vapor at this particular location is described in the present specification on page 9 at lines 7 through 20, and shown in the embodiment represented by Figure 1. Applicants specifically indicate in lines 15 through 19 to collect the vapor where the photosensitive element contacts the absorbent material since the vapor is most likely to form when the composition layer is reaching or reaches the temperature to liquefy.

The Examiner asserts that a change in the arrangement or location of mechanical elements represents an obvious expedient and that mechanical equivalents would be merely a matter of choice to one of ordinary skill in the art. But since Johnson et al. fail to discover that: 1) there are problems with vapor forming condensate throughout the apparatus; 2) the vapor is most likely to form when the composition layer is reaching or reaches the temperature to liquefy; and 3) the vapor should be collected at the nip where the exterior surface of the photosensitive element contacts the absorbent material, there is no motivation to one of ordinary skill in the art to make such a change in the arrangement or location of mechanical elements. It is insufficient to assert that it is obvious to change the location or arrangement of mechanical elements disclosed in a prior art apparatus unless there is some clear reasoning or motivation in the reference to suggest to one of ordinary skill in the art to try the claimed invention. Thus, Claim 31 is not obvious from the disclosure of Johnson et al. in view of Kurotori et al. since Johnson et al. do not acknowledge the above-mentioned

problems with vapor forming condensate throughout the apparatus, and thereby do not teach or suggest a collection member 55 for collecting the vapor at or adjacent the nip 60 where the exterior surface 17 the absorbent material 35.

The rejection of Claims 45 through 48 as being unpatentable over Johnson et al. in view of Kurotori et al. and Applicants' admitted prior art, under 35 U.S.C. 103(a), is respectfully traversed. Claims 45 through 48 either directly or indirectly depend from independent Claim 31 and thereby incorporate the limitation of the collection member 55 for collecting the vapor *placed at or adjacent the nip 60* where the exterior surface 17 contacts the absorbent material 35. Johnson et al. and Kurotori et al. in combination with the prior art do not teach or suggest a collection member 55 for collecting the vapor *at or adjacent the nip 60* where the exterior surface 17 contacts the absorbent material 35 and having all or a portion of the collected vapor form condensate for collection in a pan. Regarding Claim 48, Johnson et al. and Kurotori et al. in combination with the prior art suggest only exhausting air with vapor (not collected at the nip 60) with a vacuum fan unit under which resides the collection pan. Johnson et al. and Kurotori et al. in combination with the prior art do not teach or suggest other means for collecting the condensate including the use of piping materials in which the condensate is soluble, pumping the condensate from the apparatus, dispensing the condensate onto a condensate absorbent material, and exposing the condensate to actinic radiation (page 14, line 25 to page 15, line 29).

Regarding Claim 45, Johnson et al. and Kurotori et al. in combination with the prior art do not teach or suggest means for confining the vapor and the condensate. To confine is to hold within a location, and clearly the prior art did not confine the vapor (within the processor) or the condensate (within the pan) since according to the description of the prior art in the specification on page 3, lines 17 through 22, the vapor escaped with the exhaust air and the vapor condensed prior to reaching the condensate pan.

Regarding Claim 46, Johnson et al. and Kurotori et al. in combination with the prior art do not teach or suggest means for managing removal of the vapor and the condensate from the apparatus. Means for managing removal of the vapor and the condensate are described in the specification, page 12, line 19 through page 15, line 29, and specifically include, for example, a separation unit 70, filtration, minimizing air flow disturbances, use of piping materials in which the condensate is soluble, pumping the condensate from the apparatus, dispensing the condensate onto a condensate absorbent material, and exposing the condensate to actinic radiation. Furthermore, regarding Claim 47, Johnson et al. and Kurotori et al. in

combination with the prior art do not teach or suggest means for separating the vapor from the condensate, particularly as described in embodiments of the separation unit and filtration.

The rejection of Claim 76 as being unpatentable over Johnson et al. in view of Kurotori et al. and Applicants' admitted prior art, under 35 U.S.C. 103(a), is respectfully traversed. As described in the specification on page 4 at lines 14 through 20 and shown in Figures 1 and 2, the present invention as defined in Claim 76 comprises an apparatus 10 for forming a relief pattern from a photosensitive element 16 containing a composition layer having an exterior surface 17 and capable of being partially liquefied. The apparatus 10 comprises a means for heating 30 and 38 the exterior surface 17 of the composition layer to a temperature sufficient to cause a portion of the layer to liquefy and cause one or more components in the layer to form a vapor (see page 7, lines 3 through 30, and Figure 1). The apparatus 10 also comprises a means for collecting 55 the vapor at or adjacent the heating means 30 and 38, and a means for confining the collected vapor and the collected vapor that condenses to form condensate, connected to the collecting means and oriented vertically or substantially vertically so that the condensate flows under gravity for removal from the apparatus 10 (see page 11, line 15 to page 12, line 18, and Figure 1). The means for confining the vapor is a series of interconnected conduits 66 that direct the vapor from the collection member 55 to a means for managing the removal of the vapor (see Figure 1).

Johnson et al. and Kurotori et al. in combination with the prior art do not teach or suggest a means for confining the collected vapor and the collected vapor that condenses to form condensate, *which is connected to the collecting means and oriented vertically or substantially vertically so that the condensate flows under gravity for removal from the apparatus*. Even if one were to construe the shroud or plenum of Johnson et al. as a means for collecting the vapor at or adjacent the heating means, Johnson et al. do not suggest a means for confining the collected vapor and/or condensate in a vertical orientation so that the condensate flows under gravity for removal from the apparatus. In Figure 15 of Johnson, the shroud 358 arguably may direct the vapor, but does not confine the vapor (or condensate) in a vertical orientation for gravity flow removal from the apparatus. Also, the plenum under the conveyor 144a arguably may collect the vapor, but do not confine the vapor (or condensate) in a vertical orientation for gravity flow removal from the apparatus.

The rejection of Claims 49 through 51, 54, 55, 62 and 64 through 73 as being unpatentable over Johnson et al. in view of Kurotori et al. and Yamamoto et al. (U.S. 5,047,798), under 35 U.S.C. 103(a), is respectfully traversed. Claims 49 through 51, 54, 55,

62 and 64 through 73 either directly or indirectly depend from independent Claim 31 and thereby incorporate the limitation of the collection member 55 for collecting the vapor *placed at or adjacent the nip 60* where the exterior surface 17 of the composition layer contacts the absorbent material 35. Since Johnson et al. and Kurotori et al. do not teach or suggest a collection member 55 for collecting the vapor *at or adjacent the nip 60* where the exterior surface 17 contacts the absorbent material 35, Applicants respectfully submit that Claims 49 through 51, 54, 55, 62 and 64 through 73 are patentable over Johnson et al. and Kurotori et al. in combination with Yamamoto et al.

The rejection of Claim 75 as being unpatentable over Johnson et al. in view of Kurotori et al. and Yamamoto et al., under 35 U.S.C. 103(a), is respectfully traversed. As described in the specification on page 4 at lines 4 through 20 and shown in Figures 1 and 2, the present invention as defined in Claim 75 comprises an apparatus 10 for forming a relief pattern from a photosensitive element 16 containing a composition layer having an exterior surface 17 and capable of being partially liquefied. The apparatus 10 comprises a means for heating 30 and 38 the exterior surface 17 of the composition layer to a temperature sufficient to cause a portion of the layer to liquefy and cause one or more components in the layer to form a vapor in air (see page 7, lines 3 through 30, and Figure 1). The apparatus 10 also comprises means for collecting the vapor at or adjacent the heating means 30 and 38, and a separation unit 70 for removing the collected vapor and/or the collected vapor that condenses to form condensate from the air (see page 12, lines 19 to page 13, line 11, and Figure 2).

Yamamoto et al. disclose a thermal fixing unit 23 provided with a gas purification means (see Figure 2) comprising a gas venting fan 43 for sucking through a gas having an odor component which is released from a developer sheet 17 upon heating the sheet 17, and a filter 45 for trapping the odor component from the developer sheet 17. The filter 45 includes an outer cylindrical frame 451, metallic meshes 452 and 453 disposed at open ends of the outer cylindrical frame 451, and a deodorizing agent 454 between the metallic meshes 452 and 453. A paper having a high gas venting characteristic is provided on an inner surface of each of the metallic meshes 452 and 453, and the deodorizing agent 454 is positioned between the papers in order to absorb the odor component.

Johnson et al. and Kuritori et al. in combination with Yamamoto et al. fail to teach or suggest that equipment damaging vapor is most likely to form when the composition layer is reaching or reaches the temperature to liquefy, or that such vapor should be collected as the vapor emits from the photosensitive element 16 while the element 16 is being heated, i.e., at

or adjacent the heating means 30 and 38, as recited in Claim 75. Even if one were to arguably construe the plenum or shroud of Johnson et al. as a means for collecting the vapor at or adjacent the heating means 30 and 38, Johnson et al. do not teach *or suggest a separation unit for removing the collected vapor and the collected vapor that condenses to form condensate from the air*, as recited in Claim 75. Kuritori et al. and Yamamoto et al. do not supply the aforementioned deficiencies of Johnson et al. because Johnson et al. do not acknowledge any problems with vapor forming condensate throughout the apparatus, and thus do not teach or suggest structural elements in the apparatus to handle condensate formed from the vapor throughout the apparatus. Johnson et al. fail to acknowledge that vapor can remain within the apparatus and then condense and drip uncontrolled onto different areas within the apparatus and even onto the photosensitive element. Furthermore, neither Kuritori et al. nor Yamamoto et al. show or suggest a separation unit for removing the collected vapor and/or the collected vapor that condenses to form condensate from the air, as recited in Claim 75 and described in Applicants' specification.

The rejection of Claim 77 as being unpatentable over Johnson et al. in view of Kurotori et al. and Yamamoto et al., under 35 U.S.C. 103(a), is respectfully traversed. As described in the specification on page 4 at lines 4 through 20 and shown in Figures 1 and 2, the present invention as defined in Claim 77 comprises an apparatus 10 for forming a relief pattern from a photosensitive element 16 containing a composition layer having an exterior surface 17 and capable of being partially liquefied. The apparatus 10 comprises a means for heating 30 and 38 the exterior surface 17 of the composition layer to a temperature sufficient to cause a portion of the layer to liquefy and cause one or more components in the layer to form a vapor in air (see page 7, lines 3 through 30, and Figure 1). The apparatus 10 also comprises means for collecting the vapor at or adjacent the heating means 30 and 38, a means for maintaining the collected vapor in its vaporized state, and a means for managing removal of the collected vapor through a filter (see page 12, lines 19 to page 13, line 20, and Figure 2).

Johnson et al. and Kurotori et al. in combination with Yamamoto et al. fail to teach or suggest that equipment damaging vapor is most likely to form when the composition layer is reaching or reaches the temperature to liquefy, or that such vapor should be collected as the vapor emits from the photosensitive element 16 while the element 16 is being heated, i.e., at or adjacent the heating means 30 and 38, as recited in Claim 77. Even if one where to arguably construe the plenum or shroud of Johnson et al. as a means for collecting the vapor at or adjacent the heating means 30 and 38, Johnson et al. do not teach or suggest a means for

maintaining the collected vapor in the vaporized state, and a means for managing removal of the collected vapor through a filter, as recited in Claim 77. Kuritori et al. and Yamamoto et al. do not supply the aforementioned deficiencies of Johnson et al. because Johnson et al. do not acknowledge any problems with vapor forming condensate throughout the apparatus, and thus do not teach or suggest structural elements in the apparatus to handle condensate formed from the vapor throughout the apparatus. Johnson et al. fail to acknowledge that vapor can remain within the apparatus and then condense and drip uncontrolled onto different areas within the apparatus and even onto the photosensitive element. Furthermore, neither Kuritori et al. nor Yamamoto et al. show or suggest a means for maintaining the collected vapor in the vaporized state and a means for managing removal of the collected vapor through a filter, as recited in Claim 77 and described in Applicants' specification.

Claims 33 through 43 and 45 through 73 are dependent from Claim 31. Therefore, such claims incorporate the patentable novelty of Claim 31, and the allowance of such claims over the combination of Johnson et al. and Kuritori et al. appears to be in order for at least the reasons given above with respect to Claim 31 since such claims depend from Claim 31 and thereby incorporate the patentable novelty of Claim 31.

Reconsideration and allowance of this application are respectfully requested.

Respectfully submitted,

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